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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,299	04/12/2005	Hiroto Nishida	1155-0299PUS1	8355

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EXAMINER

LAWRENCE JR, FRANK M

ART UNIT	PAPER NUMBER
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1797

NOTIFICATION DATE	DELIVERY MODE
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04/09/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/506,299	Applicant(s) NISHIDA ET AL.	
	Examiner Frank M. Lawrence	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 6-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 6-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 6-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP '244 in view of Zwilling et al. '546.

3. EP '244 discloses a method of reusing an exhaust gas in a polyolefin production plant, comprising producing an exhaust gas containing residual monomers, nitrogen, and hydrocarbon solvent from a polymerization reactor (A), directing the exhaust gas to a flash chamber (B) and a stripping zone (C), directing exhaust gas containing remaining monomers, nitrogen and solvent to a pressure swing adsorption unit (D), selectively adsorbing hydrocarbons in the adsorber to produce purified nitrogen, regenerating the adsorber under reduced pressure with purified nitrogen product purge gas, reusing nitrogen product for pressurizing the regenerated adsorber and as stripping gas in the stripping zone, and recirculating separated hydrocarbons to the polymerization reactor. The adsorber can contain two columns in a pressure swing arrangement, each containing a single layer or multiple layers of adsorbent such as silica gel or zeolite (see col. 1, line 6 to col. 3, line 35, col. 4, line 48 to col. 7, line 56, figure 1). The instant claims differ from the disclosure of EP '244 in that the adsorbent layer includes the plural layers and that water is also removed.

Art Unit: 1797

4. Zwilling et al. '546 disclose a process for recovering nitrogen and monomers from a polymerization reactor exhaust, comprising contacting with an adsorbent unit that preferentially removes light hydrocarbons from nitrogen, and reusing purified nitrogen as purge gas in the polymerization reactor, wherein the adsorbent unit contains multiple silica gel or zeolite beds and a pretreatment layer of silica gel or zeolite to adsorb water (see figure 1, paragraphs 45, 51, 53-71). It would have been obvious to one having ordinary skill in the art at the time of the invention to provide a water adsorbent layer in the adsorber of EP '244 in order to provide a means for protecting downstream water-sensitive adsorbents from water contamination and for increasing the purity of recovered nitrogen. It is submitted that one having ordinary skill in the art would have known to arrange the adsorbent layers in a known manner to methodically remove contaminants based on their affinity to different types of adsorbents due to the ability of certain molecule sizes to enter adsorbent pores.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP '244 in view of Zwilling et al. '546 as applied to claim 1 above, and further in view of Sircar et al. '612.

6. EP '244 in view of Zwilling et al. '546 discloses all of the limitations of the claims except that the adsorbent is pressurized with inert gas from a gas holder drum. Sircar et al. '612 disclose a pressure swing adsorption process wherein a regenerated adsorbent column is resuritized using product gas from another adsorption column or from a storage vessel at feed pressure (see figures, col. 8, line 66 to col. 9, line 11). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of the primary references by using pressurization gas from a storage vessel in order to provide supplemental

pressure when adsorption product effluent from another adsorber is insufficient or not economical.

Allowable Subject Matter

7. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 2 and 6-12 have been considered but are moot in view of the new ground(s) of rejection. The examiner agrees with applicant's argument that the EP '244 reference fails to disclose an adsorbent layer formed from plural layers, however the use of plural layers is considered obvious from the teaching of the Zwilling et al. patent.

Drawings

9. The drawings were received on February 14, 2008. These drawings are approved.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Frank M. Lawrence/
Primary Examiner, Art Unit 1797

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